IN THE CLAIMS

1. (Currently amended) A method for removing noise from acoustic signals, comprising:

receiving a plurality of acoustic signals, wherein receiving the plurality of acoustic signals includes receiving using a plurality of independently located microphones;

receiving information on the vibration of human tissue associated with human voicing activity;

generating at least one first transfer function representative of the plurality of acoustic signals upon determining that voicing information is absent from the plurality of acoustic signals for at least one specified period of time; and

removing noise from the plurality of acoustic signals using the first transfer function to produce at least one denoised acoustic data stream.

2. (Original) The method of claim 1, wherein removing noise further comprises: generating at least one second transfer function representative of the plurality of acoustic signals upon determining that voicing information is present in the plurality of acoustic signals for the at least one specified period of time; and

removing noise from the plurality of acoustic signals using at least one combination of the at least one first transfer function and the at least one second transfer function to produce at least one denoised acoustic data stream.

3. (Original) The method of claim 1, wherein the plurality of acoustic signals include at least one reflection of at least one associated noise source signal and at least one reflection of at least one acoustic source signal.

4. (Original) The method of claim 1, wherein receiving the plurality of acoustic signals includes receiving using a plurality of independently located microphones.

5. (Original) The method of claim 2, wherein removing noise further includes generating at least one third transfer function using the at least one first transfer function and the at least one second transfer function.

6. (Original) The method of claim 1, wherein generating the at least one first transfer function comprises recalculating the at least one first transfer function during at least one prespecified interval.

7. (Original) The method of claim 2, wherein generating the at least one second transfer function comprises recalculating the at least one second transfer function during at least one prespecified interval.

8. (Original) The method of claim 1, wherein generating the at least one first transfer function comprises use of at least one technique selected from a group consisting of adaptive techniques and recursive techniques.

9. (Original) The method of claim 1, wherein information on the vibration of human tissue is provided by a mechanical sensor in contact with the skin.

10. (Original) The method of claim 1, wherein information on the vibration of human tissue is provided via at least one sensor selected from among at least one of an accelerometer, a skin surface microphone in physical contact with skin of a user, a human tissue vibration detector, a radio frequency (RF) vibration detector, and a laser vibration detector.

11. (Original) The method of claim 1, wherein the human tissue is at least one of on a surface of a head, near the surface of the head, on a surface of a neck, near the surface of the neck, on a surface of a chest, and near the surface of the chest.

12. (Currently amended) A method for removing noise from electronic signals, comprising:

detecting an absence of voiced information during at least one period, wherein detecting includes measuring the vibration of human tissue, wherein detecting the plurality of acoustic signals includes detecting using a plurality of independently located microphones;

receiving at least one noise source signal during the at least one period;

generating at least one transfer function representative of the at least one noise source signal;

receiving at least one composite signal comprising acoustic and noise signals; and

removing the noise signal from the at least one composite signal using the at least one transfer function to produce at least one denoised acoustic data stream.

13. (Original) The method of claim 12, wherein the at least one noise source signal includes at least one reflection of at least one associated noise source signal.

14. (Original) The method of claim 12, wherein the at least one composite signal includes at least one reflection of at least one associated composite signal.

15. (Original) The method of claim 12, wherein the human tissue is at least one of on a surface of a head, near the surface of the head, on a surface of a neck, near the surface of the neck, on a surface of a chest, and near the surface of the chest.

16. (Original) The method of claim 12, wherein detecting includes use of a mechanical sensor in contact with the human tissue.

17. (Currently amended) The method ~~system~~ of claim 12, wherein detecting includes use of a sensor selected from among at least one of an accelerometer, a skin surface microphone in physical contact with a user, a human tissue vibration detector, a radio frequency (RF) vibration detector, and a laser vibration detector.

18. (Original) The method of claim 12, wherein receiving includes receiving the at least one noise source signal using at least one microphone.

19. (Original) The method of claim 18, wherein the at least one microphone includes a plurality of independently located microphones.

20. (Original) The method of claim 12, wherein removing the noise signal from the at least one composite signal using the at least one transfer function includes generating at least one other transfer function using the at least one transfer function.

21. (Original) The method of claim 12, wherein generating at least one transfer function comprises recalculating the at least one transfer function during at least one prespecified interval.

22. (Original) The method of claim 12, wherein generating the at least one transfer function comprises calculating the at least one transfer function using at least one technique selected from a group consisting of adaptive techniques and recursive technidques.

23. (Currently amended) A <u>multiple microphone</u> method for removing noise from electronic signals, comprising:

determining at least one unvoicing period during which voiced information is absent based on vibration of human tissue;

receiving at least one noise signal input during the at least one unvoicing period and generating at least one unvoicing transfer function representative of the at least one noise signal;

receiving at least one composite signal comprising acoustic and noise signals; and

removing the noise signal from the at least one composite signal using the at least unvoicing transfer function to produce at least one denoised acoustic data stream.

24. (Original) The method of claim 23, wherein producing at least one denoised acoustic data stream further includes:

determining at least one voicing period during which voiced information is present;

receiving at least one acoustic signal input from at least one signal sensing device during the at least one voicing period and generating at least one voicing transfer function representative of the at least one acoustic signal; and

removing the noise signal from the at least one composite signal using at least one combination of the at least one unvoicing transfer function and the at least one voicing transfer function to produce the denoised acoustic data stream.

25. (Original) The method of claim 23, wherein the human tissue is at least one of on a surface of a head, near the surface of the head, on a surface of a neck, near the surface of the neck, on a surface of a chest, and near the surface of the chest.

26. (Original) A system for removing noise from the acoustic signals, comprising:

at least one receiver that receives at least one acoustic signal;

at least one sensor that receives human tissue vibration information associated with human voicing activity;

at least one processor coupled among the at least one receiver and the at least one sensor that generates a plurality of transfer functions, wherein at least one first transfer function representative of the at least one acoustic signal is generated in response to a determination that voicing information is absent from the at least one acoustic signal for at least one specified period of time, wherein noise is removed from the at least one acoustic signal using the first transfer function to produce at least one denoised acoustic data stream.

27. (Original) The system of claim 26, wherein at least one second transfer function representative of the at least one acoustic signal is generated in response to a determination that voicing information is present in the at least one acoustic signal for the at least one specified period of time, wherein noise is removed from the at least one acoustic signal using at least one combination of the at least one first transfer function and the at least one second transfer function to produce the at least one denoised acoustic data stream.

28. (Original) The system of claim 26, wherein the sensor includes a mechanical sensor in contact with the skin.

29. (Original) The system of claim 26, wherein the sensor includes at least one of an accelerometer, a skin surface microphone in physical contact with skin of a user, a human tissue vibration detector, a radio frequency (RF) vibration detector, and a laser vibration detector.

30. (Original) The system of claim 26, wherein the human tissue is at least one of on a surface of a head, near the surface of the head, on a surface of a neck, near the surface of the neck, on a surface of a chest, and near the surface of the chest.

31. (Original) The system of claim 26, further comprising:

dividing acoustic data of the at least one acoustic signal into a plurality of subbands;

removing noise from each of the plurality of subbands using the at least one first transfer function, wherein a plurality of denoised acoustic data streams are generated; and

combining the plurality of denoised acoustic data streams to generate the at least one denoised acoustic data stream.

32. (Original) The system of claim 26, wherein the at least one receiver includes a plurality of independently located microphones.

33. (Original) A system for removing noise from acoustic signals, comprising at least one processor coupled among at least one microphone and at least one voicing sensor, wherein the at least one voicing sensor detects human tissue vibration associated with voicing, wherein an absence of voiced information is detected during at least one period using the at least one voicing sensor, wherein at least one noise source signal is received during the at least one period using the at least one microphone, wherein the at least one processor generates at least one transfer function representative of the at least one noise

source signal, wherein the at least one microphone receives at least one composite signal comprising acoustic and noise signals, and the at least one processor removes the noise signal from the at least one composite signal using the at least one transfer function to produce at least one denoised acoustic data stream.

34. (Original) The system of claim 33, wherein the human tissue is at least one of on a surface of a head, near the surface of the head, on a surface of a neck, near the surface of the neck, on a surface of a chest, and near the surface of the chest.

35. (Original) A signal processing system coupled among at least one user and at least one electronic device, wherein the signal processing system includes at least one denoising subsystem for removing noise from acoustic signals, the denoising subsystem comprising at least one processor coupled among at least one receiver and at least one sensor, wherein the at least one receiver is coupled to receive at least one acoustic signal, wherein the at least one sensor detects human tissue vibration associated with human voicing activity, wherein the at least one processor generates a plurality of transfer functions, wherein at least one first transfer function representative of the at least one acoustic signal is generated in response to a determination that voicing information is absent from the at least one acoustic signal for at least one specified period of time, wherein noise is removed from the at least one acoustic signal using the first transfer function to produce at least one denoised acoustic data stream.

36. (Original) The system of claim 35, wherein at least one second transfer function representative of the at least one acoustic signal is generated in response to a determination that voicing information is present in the at least one acoustic signal for at least one specified period of time, wherein noise is removed from the at least one acoustic signal using at least one combination of the at least one first transfer function and the at least one second transfer function to produce at least one denoised acoustic data stream.

37. (Original) The system of claim 35, wherein the at least one electronic device includes at least one of cellular telephones, personal digital assistants, portable

communication devices, computers, video cameras, digital cameras, and telematics systems.

38. (Original) The system of claim 35, wherein the human tissue is at least one of on a surface of a head, near the surface of the head, on a surface of a neck, near the surface of the neck, on a surface of a chest, and near the surface of the chest.

39. (Original) A computer readable medium comprising executable instructions which, when executed in a processing system, remove noise from received acoustic signals by:

receiving at least one acoustic signal;

receiving human tissue vibration information associated with human voicing activity;

generating at least one first transfer function representative of the at least one acoustic signal upon determining that voicing information is absent from the at least one acoustic signal for at least one specified period of time; and

removing noise from the at least one acoustic signal using the at least one first transfer function to produce at least one denoised acoustic data stream.

40. (Original) The medium of claim 39, wherein removing noise from received acoustic signals further includes:

generating at least one second transfer function representative of the at least one acoustic signal upon determining that voicing information is present in the at least one acoustic signal for at least one specified period of time; and

removing noise from the at least one acoustic signal using at least one combination of the at least one first transfer function and the at least one second transfer function to produce at least one denoised acoustic data stream.

41. (Original) The medium of claim 39, wherein the human tissue is at least one of on a surface of a head, near the surface of the head, on a surface of a neck, near the surface of the neck, on a surface of a chest, and near the surface of the chest.

42. (Original) An electromagnetic medium comprising executable instructions which, when executed in a processing system, remove noise from received acoustic signals by:

receiving at least one acoustic signal;

receiving human tissue vibration information associated with human voicing activity;

generating at least one first transfer function representative of the at least one acoustic signal upon determining that voicing information is absent from the at least one acoustic signal for at least one specified period of time; and

removing noise from the at least one acoustic signal using the at least one first transfer function to produce at least one denoised acoustic data stream.

43. (Original) The medium of claim 42, wherein removing noise from received acoustic signals further includes:

generating at least one second transfer function representative of the at least one acoustic signal upon determining that voicing information is present in the at least one acoustic signal for at least one specified period of time; and

removing noise from the at least one acoustic signal using at least one combination of the at least one first transfer function and the at least one second transfer function to produce at least one denoised acoustic data stream.

44. (Original) The medium of claim 42, wherein the human tissue is at least one of on a surface of a head, near the surface of the head, on a surface of a neck, near the surface of the neck, on a surface of a chest, and near the surface of the chest.